LIFT-O-FLEX® 17000 SP 400
Manual

LIFT-O-FLEX® 17000 SP 400

December 2001 Edition

Lifter Serial Number: _____
Lift Mast Serial Number: _____
Intermediate Member Serial No.: _____
Power Pack Serial No.: _____

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Lift-O-Flex™ 17000 SP 400 Manual

TABLE OF CONTENTS

1. LIFT-O-FLEX® 17000 SP 400 2

1.1 Warranty *3*

2. ASSEMBLY INSTRUCTIONS 4

2.1 Assembly *4*

3. OPERATING INSTRUCTIONS 7

3.1 Operating *7*
3.1.1 Charging *7*
3.1.2 Handlebar *8*
3.1.3 Lifting *8*
3.1.4 Transport *8*
3.2 Troubleshooting *9*
3.3 Maintenance *10*

4. ENCLOSURES 11

4.1 Electrical wiring *11*
4.1.1 Wiring for Intermediate Member with brake motor *11*
4.1.2 Wiring of Motor Controller *12*
4.3.3 Wiring of Remote Control *13*
4.3.4 Intermediate Section *14*
4.3.5 Legs *15*
4.4.6 Mast *16*
4.4.7 Handle *17*
4.4.8 Brake rod *18*
4.4.9 Power Pack *19*
4.4.10 Lifter Check List *20*

5. Declaration of Conformity 21

1. LIFT-O-FLEX® 17000 SP 400

LIFT-O-FLEX® is a registered trademark of RONI, LLC, Charlotte NC.

NOTE: It is important that you read and fully understand this manual before using your Lift-O-Flex®Lifter. If you have any questions contact your distributor or the manufacturer.

GENERAL DATA

• Type	LIFT-O-FLEX® 17000 SP 400
• Total Lift Capacity	• 400-lbs. (includes load weight and end-effector)
• Certification	• CE Marked
• Material	• Chassis – Aluminum - Powder Coat Finish • Lift Mast - Aluminum. • End-Effector-stainless steel, 304.
• Lifter Weight (with End-Effector)	• ~84-lbs.
• Weighted average for vibrations during operation	• Not to exceed 2.5 m/s2
• Operational Sound Level	• Not to exceed 70 dB (A)
• Declaration of Conformity	• Delivered with each lifter
• Labeling	• Manufacturer • Year of Manufacture • Serial Number

GOOD WORKING ENVIRONMENT

LIFT-O-FLEX® lifters are designed to ergonomically assist in material handling operations. By using the lifter, the prevention or elimination of injuries as well as the creation of safer working conditions for personnel will occur. People that already suffer from injuries or have suffered injuries will find that the lifter will enhance productivity. The lifter is designed for use in warehouses, industrial plants, institutional kitchens, drug stores, post offices, etc.

FLEXIBLE

LIFT-O-FLEX® can lift and transport boxes, totes, rolls, etc. up to a weight of 400lb. The end-effector is electrically lifted and lowered. A lift height of 60” from the floor is provided for your material handling needs.

OPERATIONAL SAFETY

The ergonomic design of LIFT-O-FLEX® is by itself an active factor of operational safety. Other factors of security and technical features are as follows:

- The movement of the load platform will stop should an object be placed in-between the lift frame and the load platform or if other jamming occurs.
- The lifter can not be overloaded since it will automatically stop the lifting function if loaded with more than the maximum load of 400lb.
- A simple and easily operated foot activated system is installed for central wheel locking of the rear casters along with providing a directional wheel lock.
- The LIFT-O-FLEX® is easy to use in confined spaces and aisleways due to its compact outside dimensions and large caster wheels. Both rear caster wheels has a directional lock, which makes maneuvering of the LIFT-O-FLEX® simple.
- The handlebar is designed to protect the operator's hands while maneuvering the lifter.

SERVICE

The service is easy. Modular parts, electronics and batteries are easily accessible for replacement. This manual includes a spare parts list with drawings.

RECYCLABLE

The LIFT-O-FLEX® is made of recyclable aluminum materials. The LIFT-O-FLEX® uses gel-cell batteries, which do not leak gas and require no maintenance and are acceptable for recycling.

1.1 Warranty

Each lifter has a warranty that is valid for one (1) year from the date of shipment. The warranty provides that lifter is free from defects in material and workmanship. The batteries have a standard manufacturers warranty of thirty- (30) day.

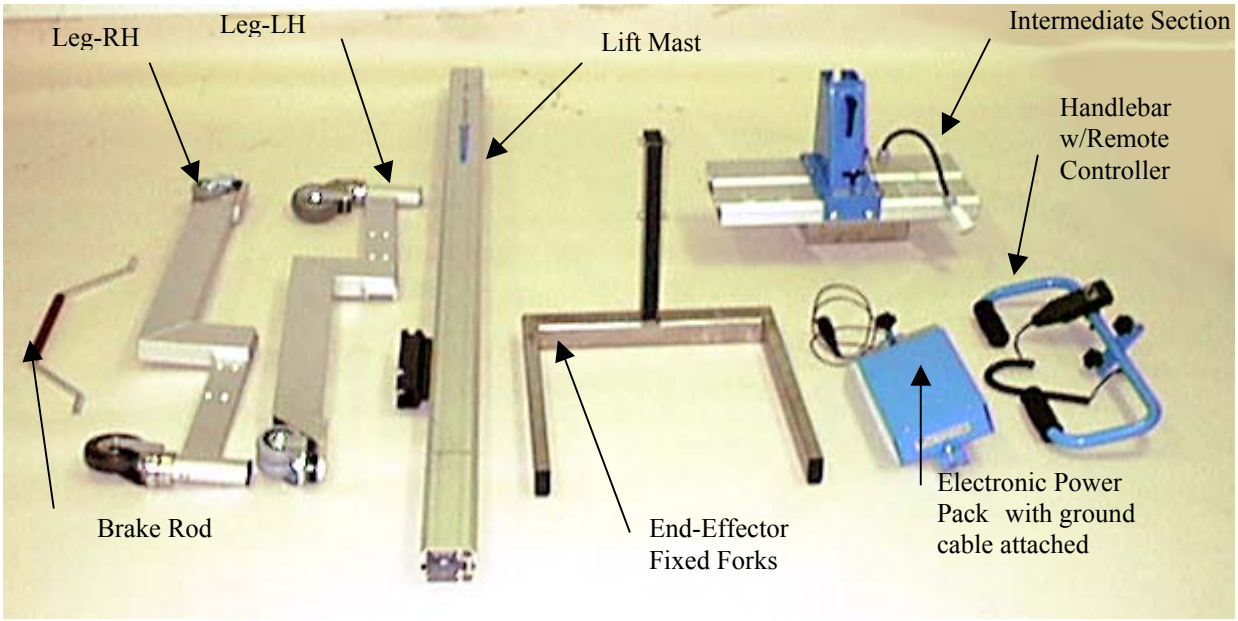
The warranty is valid providing the customer follows the instruction manual and completes the maintenance procedures as described. Normal maintenance, calibration or regular adjustments as specified in the operating instructions are the responsibility of the customer.

Abuse and/or careless operation will void the warranty.

This warranty is exclusive and is in lieu of all other warranties, expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose, each of which is hereby expressly disclaimed.

2. Assembly instructions

Each lifter is to be delivered in modules and will be shipped in cardboard box(s). Components are as indicated below.



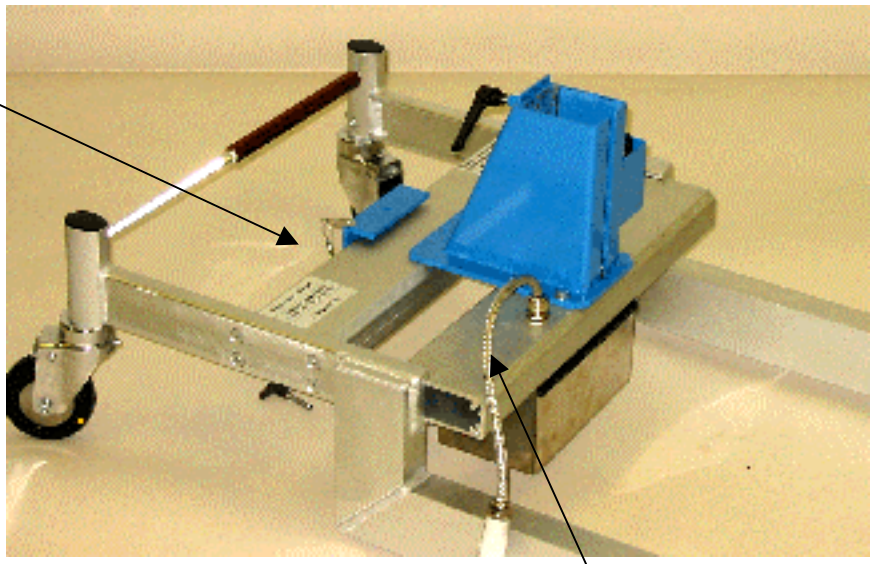
2.1 Assembly

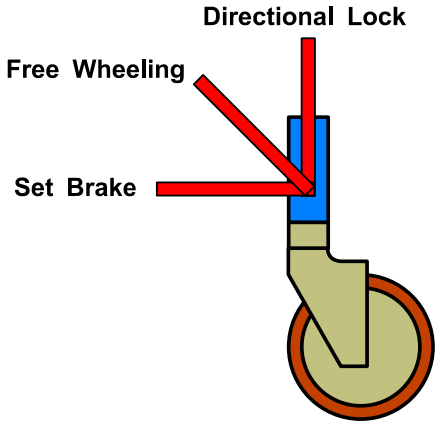
Assembly instructions

1. Place the intermediate section without lift motor attached and stand it on its end on the floor. Make sure that the mast collar hold down clip is facing to the rear of the lifter. (See picture on next page). Take the four flathead hex screws (M 8 x 30 mm), take one of the legs and mount the leg to the frame with the 5mm Allen wrench enclosed.

2. Turn the intermediate section with one leg attached on its side and insert the brake rod (item 13 or 14) at a forward angle (the wheels are now in the locked position) into the hexagon hole situated above the wheel. Take the next leg and insert the brake rod into its hexagon hole located above the wheel and secure the leg with the screws as described above. Check to make sure both rear casters are in the locked position prior to bolting final leg to intermediate section.

   Next, slip the lift motor intermediate section into the leg channels provided at the front of the lifter base. Remove quick disconnect pin from rear bracket prior to sliding lift motor intermediate section into position. Lock it into place by re-inserting the quick disconnect pin.


Bolted Intermediate Section
Lift Motor Intermediate Section-Lock in Place with Quick Disconnect Pin Located on Bolted Intermediate Section Bracket.



BRAKE ROD POSITIONS

3. Pick up the lift mast and carefully insert the mast onto the mounting slide. (A mounting slot is provided full length on the rear of the mast). Slide the mast onto the mounting slide until it mates with coupling located at the bottom of the intermediate section. (If the coupling does not seat properly, lift the mast up approximately 2" from the intermediate section, lift up on the end-effector mounting yoke (this will turn the coupling on the lift mast) and push the mast into position). An indicator line is provided on each mast that matches the top of the lift mast mounting yoke. This must be aligned for proper operation of the lifter.

4. Tighten the handle on the back of the mounting yoke.

5. Take the power package and let it slide into the slot on the rear of the lift mast. Then lower it until it stops just above the mast mounting yoke and tighten the handle. Plug the motor cable into its outlet on the power package.

6. Take the handle and let it slide into the slot on the backside of the lift mast and lock it in place at a comfortable height. Make sure that the remote control holder is placed on the handle in an adequate position. Then place the remote control on the remote control holder in the keyhole slot and plug in the controller to the electronic power pack.

7. Lift the end-effector up and tilt the mounting post down so that the mounting lugs can be placed in the
slot located at the top of the mast yoke. Make sure that the mounting lugs are seated in the bottom of the slot and then lower the front of the end-effector until the bottom mounting lugs engage the horizontal slot on the mast yoke.

The lifter is now ready to operate.

Disposal after useful life

When the lifter has provided many years of use and is ready to be disposed of, it should be recycled. The LIFT-O-FLEX® lifter is manufactured with materials that are recyclable. We have also selected recyclable gel-cell batteries over nickel-cadmium batteries for this purpose.

3. Operating instructions

3.1 Operating

In order to prevent and avoid work injuries it is important that the LIFT-O-FLEX® be operated in a proper manner.

3.1.1 Charging

NOTE: DO NOT OPERATE LIFTER WHEN CHARGING BATTERIES

Gel-Cell batteries cannot withstand total discharging and need to be recharged after use. The battery charger supplied with the lifter connects to an ordinary electrical wall outlet and allows for recharging the batteries.

Normal Charging requires approximately 6 hours.

Note: The battery chargers will not over charge the batteries. The electronic card used on the lifter will not allow for total discharge of the batteries. Continuous lifter use will not hurt the batteries.

The batteries will not leak and are maintenance free (18 volt, 6.5 Ahr-Standard).

The lifter should be recharged every night, over weekends, holidays and after prolonged periods without use, or the batteries will loose the capability of being recharged. This will ensure that the batteries can achieve a maximum charge and that they will handle the lifts required during the working day.

Note: Due to the worldwide disbursement of lifters, one of three (3) types of chargers will be delivered with each lifter in order to meet the various power requirements utilized.

North America: 17136-110VAC/18VDC with standard US plug.
Europe: 17134-230VAC/18VDC with 2 prong European plug.
Pacific Rim: 17082-100-240VAC/18VDC with standard US Plug.

The European charger may require a plug adapter to fit countries wall socket.
The Pacific Rim charger will require a pigtail adapter from standard US plug to plug to fit countries wall socket.

Adapter plugs to fit chargers for wall sockets are the responsibility of Hewlett-Packard.

3.1.2 Handlebar

The height of the handlebar can easily be adjusted by loosening the quick disconnect handles and sliding the handlebar to the desired position. After adjustment, tighten the quick disconnect handles. To obtain the best working conditions it is important to adjust the handle to a comfortable level.

During movement of the lifter, always keep hands inside the handle. This will protect the hands if the handlebar should encounter an obstacle.

3.1.3 Lifting

Important!
The maximum lift capacity is limited to 400lb.
The lifter is not to be used for personnel transportation.

Place your LIFT-O-FLEX® in the working area. Make sure to always apply the brake before loading or unloading the end-effector. To apply the brakes, push the red brake bar forward to its bottom position.

Be certain that the end-effector is placed on the same level as the object being loaded. To adjust the elevation of the end-effector, use the buttons on the remote control pendant. The remote control pendant has arrows to show the direction of operation.

Place the load on the end-effector. The load should always be positioned centrally in order to obtain the best stability possible. The load should be placed at the center and back of the end-effector.

When loading different items raise/lower the end-effector to the correct elevation, making it easy to push or pull the items on or off the end-effector.

The remote control pendant can rest on the handle or be held in the hand in the best position to observe the movement of the end-effector. The remote control holder with keyhole slot is mounted on the handlebar and can be easily adjusted. Turn the quick release handle loosening the holder, adjust to the desired angle or position and retighten the quick release handle to lock it in place.

3.1.4 Transport

The end-effector should always to be lowered to the lowest possible position before moving the lifter. Unlock the central brake by positioning the red bar in the middle position. All four wheels can now swivel in any direction.

Directional wheel locks

When moving a heavy load, it is both easier and safer if you use the directional wheel locks by moving the red bar into the upper position. Both back wheels are now locked in a straightforward position. This gives greater directional stability when moving heavy loads. Observe that it is especially important that a heavy load be kept as low and as centered on the end-effector as possible.

3.2 Troubleshooting

The LIFT-O-FLEX® has been designed to operate safely and effectively provided that maintenance procedures are followed according to the instruction manual. A guide for trouble shooting is provided as listed below should any problems arise. If the problem remains after referring to the troubleshooting guide below - contact **RONI, LLC** in Charlotte, NC.

Symptom	Action
1. The lifter does not run at all.	A) Check the voltage of the battery (18 Volts). B) Inside the power package where the batteries are located is a 20-ampere fuse (T16L-250V). Check that it's intact and operable. C) Check that the connections to the battery charger have been connected properly during recharge. D) Check that the maximum load is not exceeded.
2. The end-effector cannot be lowered or raised but the motor runs.	A) Check that the mast is positioned correctly in the intermediate section. See above 2.1 Assembly.
3. The end-effector moves at a slower speed than normal	A) See above 1A, 1C and 1D.
4. When lifting there is a strange sound and/or the lifter operates differently than usual.	A) Attend the prescribed actions under 3.5 Maintenance

3.3 Maintenance

Regular maintenance is important to protect the continued use of the LIFT-O-FLEX® lifter.

Daily maintenance

1. Wash the lifter with a detergent suitable for powder coat surfaces, aluminium and stainless steel. Follow the instructions on the detergent. Wipe the lifter dry. **Do not use a high-pressure hose. It could damage both the electronics as well as the chassis.**

3. The batteries are to be charged every night or when the lifter is not being used for a long period of time. **The batteries cannot be "over charged".**

Every 6 month maintenance

1. Electrical connections: Check all connections and have any items that show wear or damage repaired. Replace if needed.

2. Bolts and screws: Check that all bolts and screws are tight.

3. Lift mast: Take the mast out of the base frame. Wipe it clean and lubricate it with ball bearing grease. When the mast is out of the intermediate section the bristles in the mast are to be taken out from the bottom of the mast and cleaned. At the same time the screw can be lubricated with ball bearing grease. Assemble the mast, see 2.1 Assembly, and check that the end-effector is operating properly.

4. Wheels: Check that all wheels run smoothly and lubricate the ball bearings regularly. Check that the wheel rubber is not worn or damaged.

5. Central brake system: Check that all brake positions are operating properly:
   - Rear wheels locked (brake rod is in lower (horizontal) position)
   - Neutral, casters are unlocked (brake rod is in middle position)
   - Directional lock engaged (brake rod is in the upper (vertical) position)

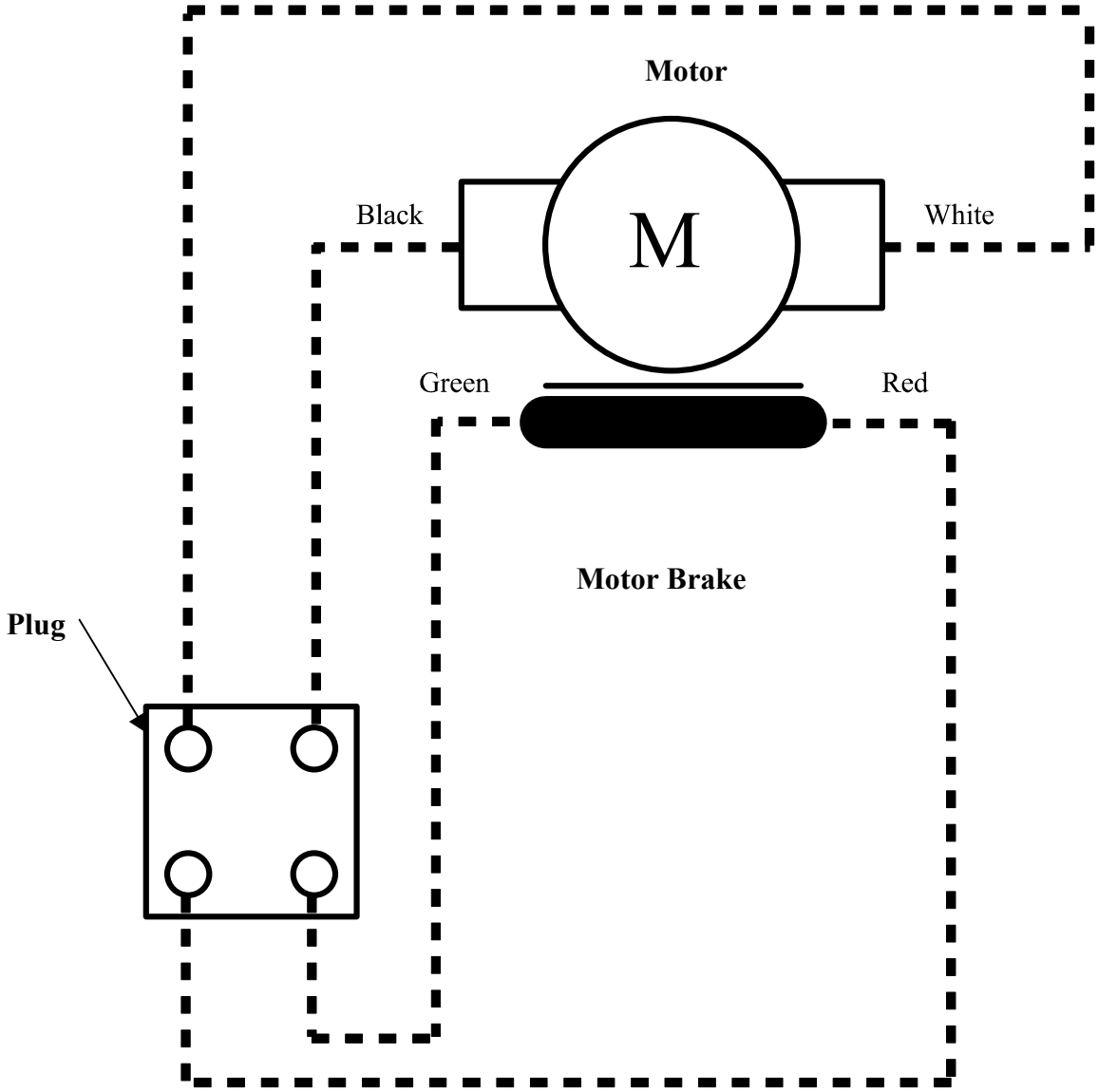
6. Quick disconnect handle for handlebar and the mounting bracket for remote control and power pack: Check that the quick disconnect handles can be loosened and tightened properly.

7. Identification and warning signs: Check that the signs are well attached and can be read. They are mounted for your safety.

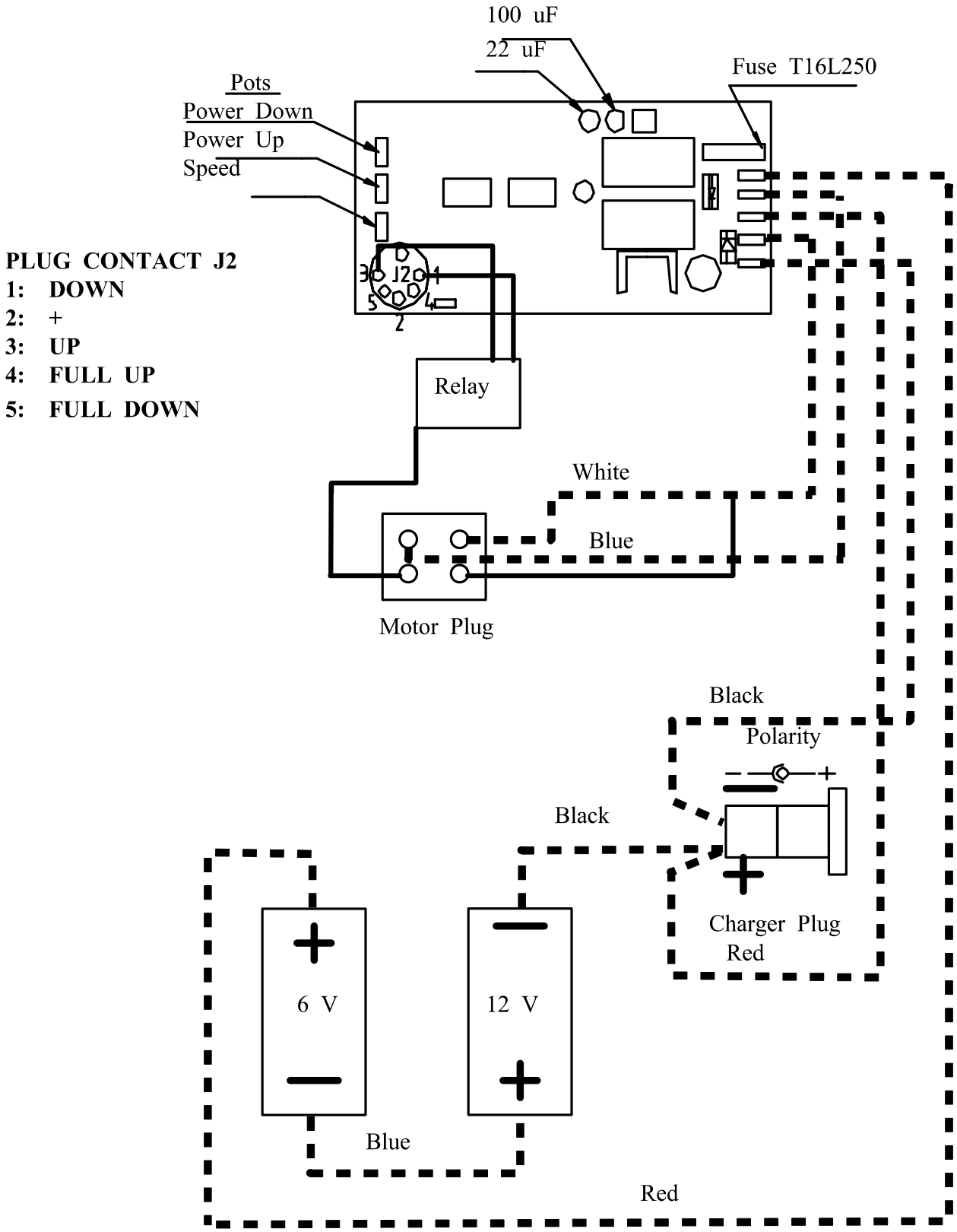
4. Enclosures

4.1 Electrical wiring

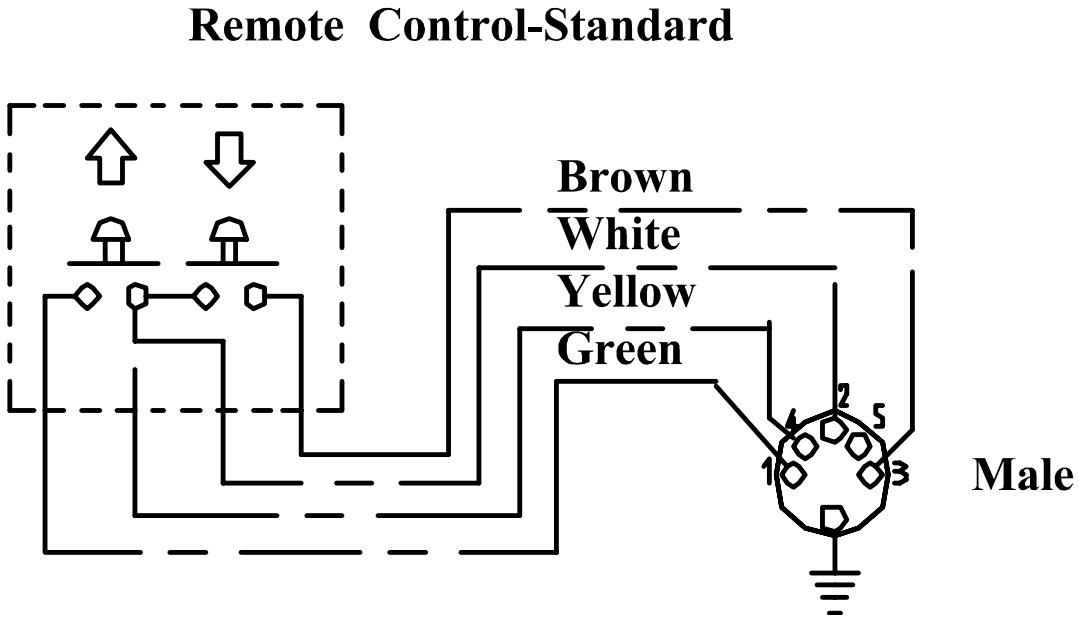
4.1.1 Wiring for Intermediate Member with brake motor



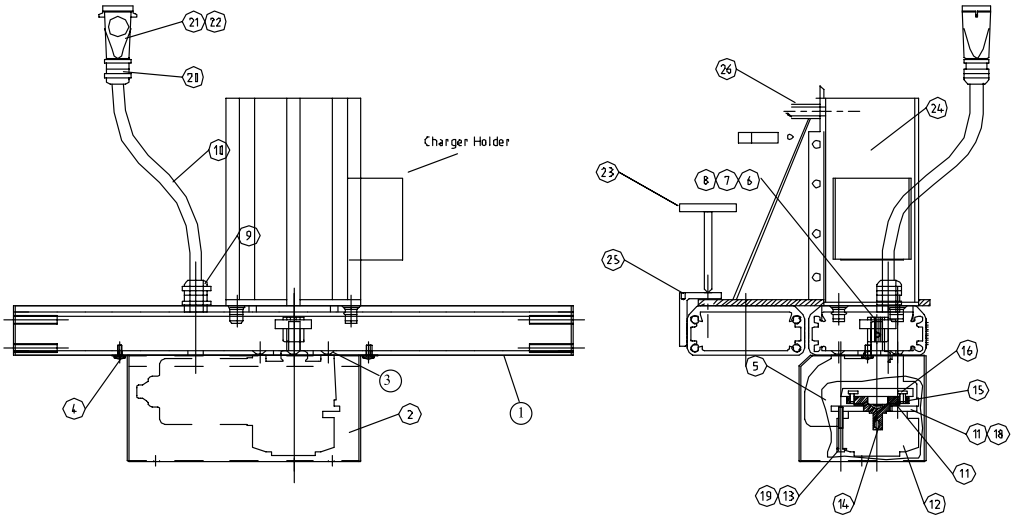
4.1.2 Wiring of Motor Controller



4.3.3 Wiring of Remote Control



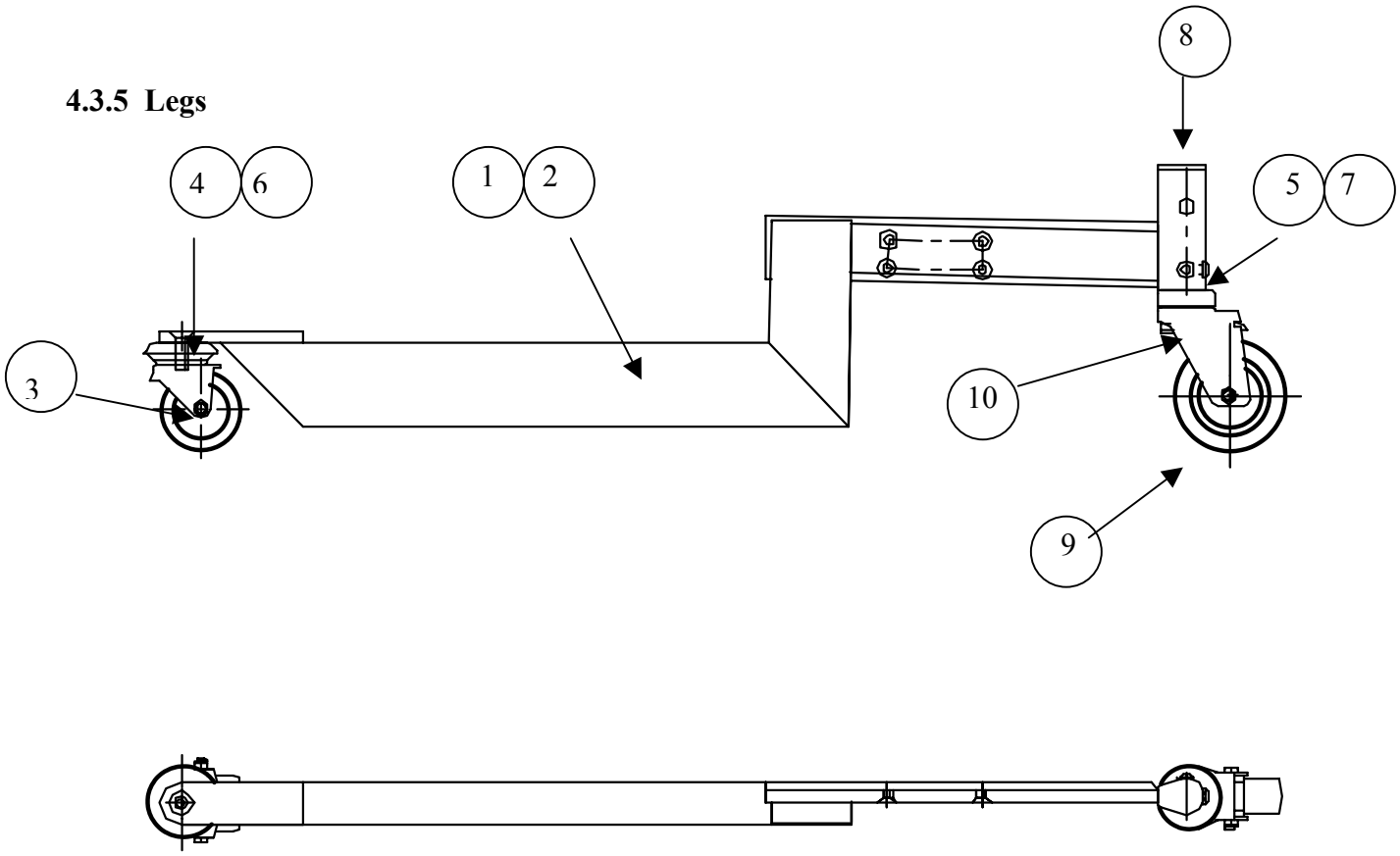
4.3.4 Intermediate Section



Part No. 30-0071

Item No.	Qty	Description	Part No.
1	1	Front Beam	15700—11
2	1	SS Motor Cover	15700-10
3	3	Screw	13211
4	2	Screw	13244
5	1	Motor 403-930	15700-13
6	1	Wedge 3 x 3.7	18118
7	1	Bowex Junior 14	15101
8	1	Stop Screw	SK6SS M5 STAL
9	1	Fitting PG 13.5	19165
10	1	Cable 4x1.5 Shielded	L=700
11	1	Bracket-Brake	17279
12	1	Stop	15700-12
13	3	Screw	13248
14	1	Wedge 3x2.5	L=8
15	1	Driving Disc for Brake	17278
16	6	Screw	13217
17	1	Washer	17277
18	3	Screw	13447
19	3	Washer	13249
20	1	Fitting PG 13.5	ELFA 55-019-78
21	1	Cable Fitting	Ron I Supply
22	1	Connector-Male	RonI Supply
23	1	T-Handle Pin	McMaster 93750A305
24	1	Mast Bracket	10-0375
25	1	Angle Stiffener Bracket	10-0373
26	1	Mast Ratchet Handle	McMaster

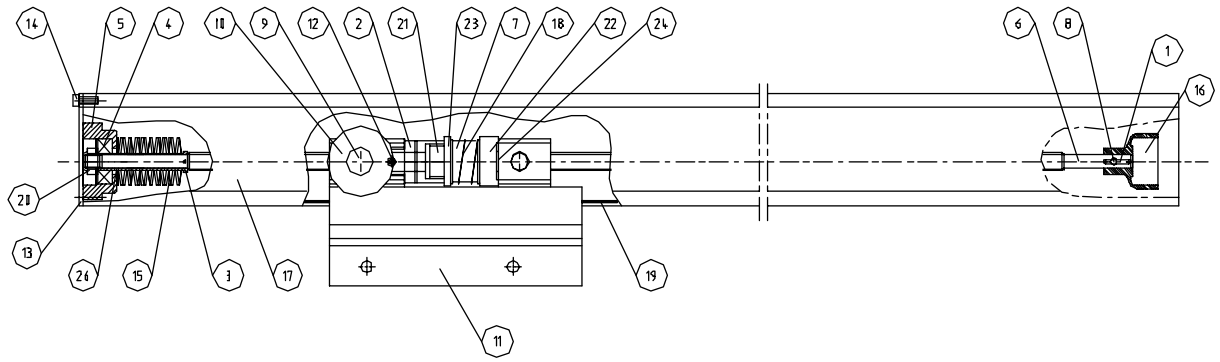
4.3.5 Legs



Part No. 14016-10

Item No.	Qty	Description	Part No.
1	1	Leg Left	HP0009L
2	1	Leg Right	HP0009R
3	2	Swivel Caster – Front – Dual Wheel-75mm	19502
4	2	Screw	MF6S M12x30 10.9 fxb
5	4	Screw	K62 M8x12 10.9 fzb
6	1	Washer	LM6M M12
7	4	Washer	1Z 8.4 STAL fzb
8	2	Cap	17254
9	2	Rear Wheel –100mm - ESD	17105
10	2	Swivel Assembly-Rear w/Brake Rod Socket	17557

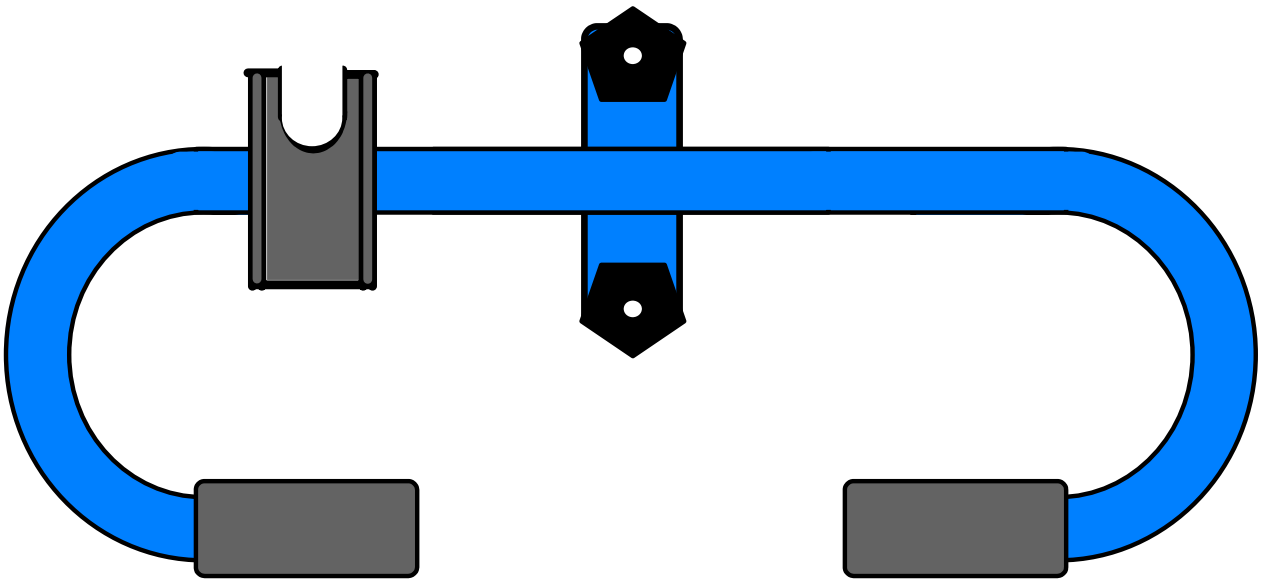
4.4.6 Mast



Part No. 15700E03

Item No.	Qty	Description	Part No.
1	1	Key	17531
2	1	Slide Coupling	17567
3	1	Sleeve	17529
4	1	Ball Bearing	17520
5	1	Pillow Block Bearing	17521
6	1	Ball Screw	17540
7	1	Ball Nut	17523
8	1	Stop Screw	13227
9	4	Shaft	17515
10	4	Wheel	17516
11	1	Slide	17517
12	1	Stop Screw	17523
13	1	End Cover	17000-82
14	4	Screw	MC6S M5 x 19 fxb
15	19	Spring Washer	34x12.3x1.5
16	1	Bowex Junior 14	15102
17	1	Mast Profile	17511-01
18	1	Spring	17581
19	2	Mast Brush	L=1821
20	1	Nut	13407
21	1	Screw Connecting Unit	17566
22	1	Spacer L=15	17568
23	1	Spacer L=5	17569
24	1	Washer	17580

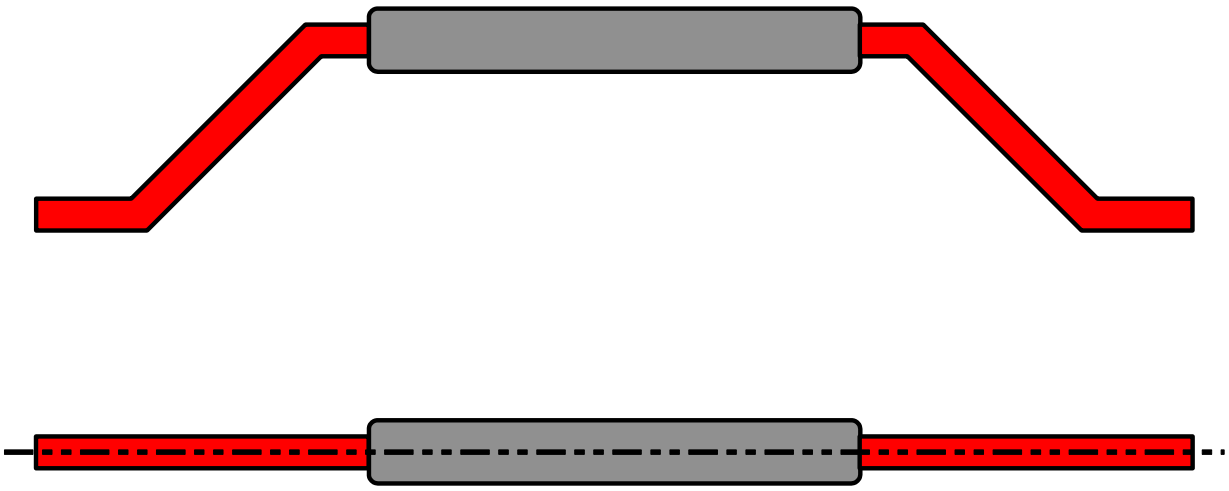
4.4.7 Handle



Part No. 17280HP

Item No.	Qty	Description	Part No.
1	1	Handle	17280-01
2	1	Remote Control Holder	17201
3	1	Lock Bar	19134
4	2	Knob	17256
5	2	Washer	BRB 8.4 HB 200fzb
6	2	Handlebar Grips	GP-105

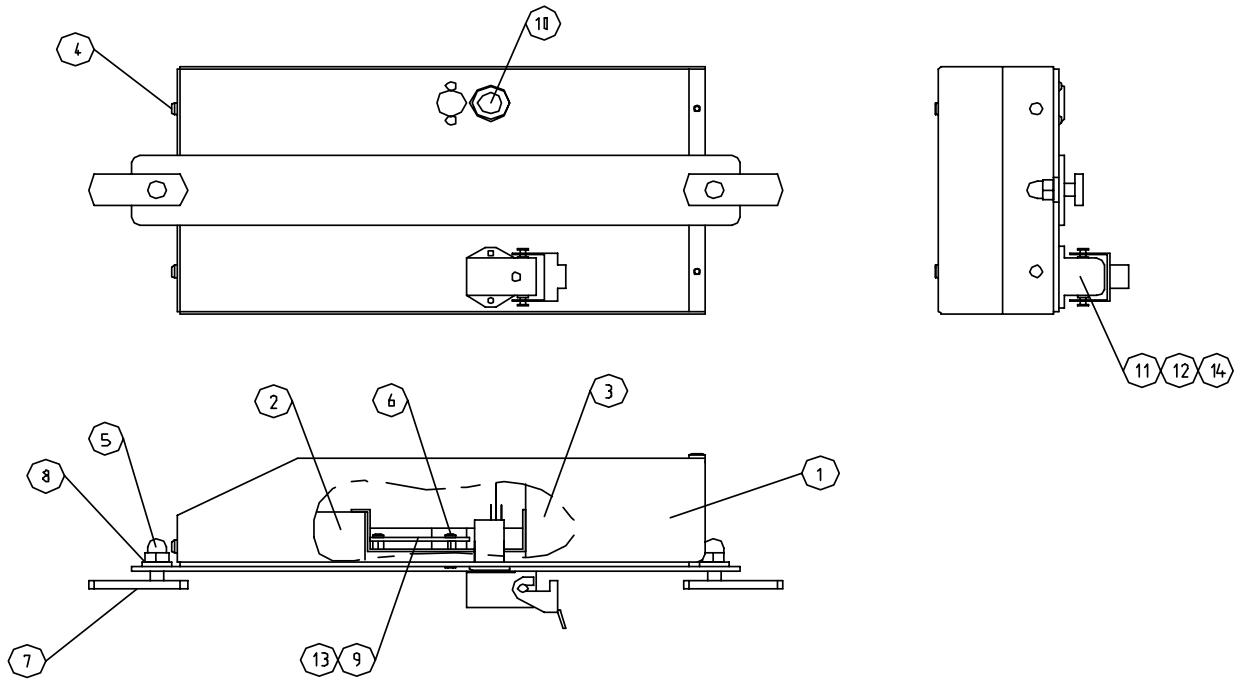
4.4.8 Brake rod



Part No. 17287

Item No.	Qty	Description	Part No.
1	1	Brake Rod	174287

4.4.9 Power Pack



Note: Ground Cable with alligator clip not shown

Part No. 15700E04

Item No.	Qty	Description	Part No.
1	1	Power Pack Cover	17159
2	1	Battery 6V	17548
3	1	Battery 12V	17549
4	4	Screw	MRX M4x6 fzb
5	2	Handle	17256
6	5	Screw	Not Required
7	2	Screw Bar	17249
8	2	Washer	13306
9	1	Control Board BG6 18V	17274

10	1	Charger Plug	17327
11	1	Base	RonI Supplied
12	1	Insert	RonI Supplied
13	1	Cable Kit	17126
14	2	Screw	

4.4.10 Lifter Check List

During assembly of the LIFT-O-FLEX® 17000 SP 400 components are required to be inspected prior to using the lifter. This is to ensure that the lifter will operate safely and ergonomically.

- Casters swivel and rotate properly
- Intermediate section assembled to legs with the bolts provided and are secure.
- Brake rod mounted to ensure proper operation.
- Wiring is not pinched, loose or frayed.
- Lift mast is seated properly to the motor coupling in intermediate section after assembly.
- Quick release handles are in proper working order.
- Plugs for motor power and remote controller are mounted properly in the proper connector.
- Handlebar is at correct height.
- Forks mounted.
- Remote controller operates up/down functions properly.
- Batteries charged.

5. Declaration of Conformity

Referring to Directive for machines 89/392/EEC with addendum - appendix 2A

Supplier: **RONI,LLC,9311 Monroe Rd, Suite D, Charlotte, NC 28270**
Address

Description: **LIFT-O-FLEX® 17000 SP 400**

Regulations: **AFS 1993:10 (89/392/EEG) AND (91/368/EEG)**
Regulations that the lifter complies to.

Standards: **EN 292-1, EN 292-2, EN 294, EN 60204-1, EN 349**
(when applicable) Applicable harmonized standards
IKH 4.30.01 utg 3, SMS 2986
Applicable national standards and specifications

The item above hereby is assured to be in compliance of the fundamental requirements as stated in the Directive for machines 89/392/EEC with addendum, respectively be in compliance with the machine that has gone through Common market control by an institution as above.

Signature:_____